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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,722	09/12/2003	John M. Koegler III	200315232-1	8307

22879 7590 12/10/2007

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EXAMINER	
LAMB, CHRISTOPHER RAY	
ART UNIT	**PAPER NUMBER**
2627	

NOTIFICATION DATE	DELIVERY MODE
12/10/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/661,722	KOEGLER ET AL.	
	Examiner	Art Unit	
	Christopher R. Lamb	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-4,6-22 and 24-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-4,6-22 and 24-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/31/07,11/9/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 31st, 2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 21, 2, 4, 24, 22, 25, 7, 8, 13, 16, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda (US 2002/0191517) in view of Klein (US 6,145,368), and further in view of Satoh (US 5,119,363).

Regarding claim 21:

Honda discloses:

An optical disk drive (Fig. 6), comprising:

a spindle motor to turn an optical disk (Fig. 6: 56);

an OPU to apply an image to a coating within a label region of the optical disk (Fig. 6: 67).

Honda does not disclose:

an encoder configured to track substantially identical disk speed features in a first annular ring at a first radial position on the optical disk in a region distinct from the label region so as to thereby obtain disk speed data, the disk drive further configured to track disk angular orientation features different from the disk speed features in a second annular ring at a second radial position on the optical disk so as to thereby obtain angular orientation data, the second annular ring abutting the first annular ring, the disk angular orientation features different from the disk speed features, and at least some of the disk angular orientation features having the same angular position as at least some of the disk speed features.

However, Honda does disclose tracking the disk speed (paragraph 37) and angular orientation (paragraph 38).

Klein discloses:

an encoder (the encoder is shown in Fig. 1A, but the specific embodiment relied upon is that of Fig. 2) configured to track substantially identical disk speed features in a first annular ring at a first radial position on a disk (Fig. 2: 104) so as to thereby obtain disk speed data (column 1, lines 25-45), the disk drive further configured to track disk angular orientation features different from the disk speed features in a second annular ring at a second radial position on the optical disk (Fig. 2: 102) so as to thereby obtain angular orientation data (column 1, lines 24-45), the disk angular orientation features different from the disk speed features (apparent from Fig. 2), and at least some of the

disk angular orientation features having the same angular position as at least some of the disk speed features (apparent from Fig. 2).

It would have been obvious to one of ordinary skill in the art to include in Honda an encoder configured to track substantially identical disk speed features in a first annular ring at a first radial position on the optical disk in a region distinct from the label region so as to thereby obtain disk speed data, the disk drive further configured to track disk angular orientation features different from the disk speed features in a second annular ring at a second radial position on the optical disk so as to thereby obtain angular orientation data, the disk angular orientation features different from the disk speed features, and at least some of the disk angular orientation features having the same angular position as at least some of the disk speed features.

The motivation would be to measure the disk speed and angle directly from the disk itself, improving measurement accuracy.

Honda in view of Klein does not disclose:

(A) "the second annular ring abutting the first annular ring."

(B) "the annular rings proximate a central hub of the disk"

Regarding (A):

It would have been obvious to one of ordinary skill in the art to include in Honda in view of Klein wherein the second annular ring abuts the first annular ring.

The rationale is as follows:

Whether the first annular ring abuts the second annular ring makes no difference to its purpose: the speed and angular tracking works no better or worse whether the rings abut or not.

Furthermore, the applicant's specification, as originally filed, does not disclose any benefit or reason to have the rings abut one another. Applicant merely discloses embodiments where they abut (as per Fig. 1) and other embodiments where they do not (as per Fig. 2).

It has been held (see, e.g., *In re Japikse,* 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)) that shifting the position of a part is obvious when it does not modify the operation of the invention. Therefore shifting the position of the annular rings of Honda in view of Klein so that they abut would have been obvious to one of ordinary skill at the time of the invention.

Regarding (B):

Satoh discloses wherein an annular ring used to track disc speed data and disc angular orientation data is proximate a central hub of the disk (Fig. 8; column 6, lines 2-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Honda in view of Klein where the annular rings are proximate a central hub of the disk.

The rationale is as follows:

Honda in view of Klein discloses the rings; Satoh shows putting rings proximate the central hub is a known technique; and one of ordinary skill could have combined these two teachings together with predictable results.

Regarding claim 2:

In Honda in view of Klein, and further in view of Satoh, the encoder is additionally configured to track the disk angular orientation features, the disk angular orientation features molded within the region distinct from the label region (the two light emitting and light receiving devices taught by Klein Fig. 1 together constitute "the encoder").

Regarding claim 4:

Honda in view of Klein, and further in view of Satoh, discloses a control procedure to coordinate disk speed data from the encoder with the OPU during application of the image (Honda discloses coordinating the disk speed signal with the optical pickup in paragraph 37).

Regarding claim 24:

Honda in view of Klein, and further in view of Satoh, does not disclose "wherein the first radial position is nearer the central hub of the disk than the second radial position."

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Honda in view of Klein, and further in view of Satoh, wherein the first radial position is nearer the central hub of the disk than the second radial position.

The rationale is as follows:

Which of the two annular rings is closer to the central hub of the disk makes no difference to its purpose: the speed and angular tracking work no better or worse no matter which ring is inside or outside.

Furthermore, the applicant's specification, as originally filed, does not disclose any benefit or reason to have one ring inside the other.

It has been held (see, e.g., *In re Japikse,* 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)) that shifting the position of a part is obvious when it does not modify the operation of the invention. Therefore shifting the position of the annular rings of Honda in view of Klein, and further in view of Satoh, so that the first radial position is nearer the central hub of the disk than the second radial position, would have been obvious.

Regarding claims 22 and 25:

These claims are similar to claims 21 and 24 except that they are claims to a processor-readable medium. Honda discloses a processor-readable medium (required by the system controller and/or host computer of Fig. 6). All other elements of these claims have already been identified in earlier rejections.

Regarding claim 7:

This claim is similar to claim 2 and similarly rejected.

Regarding claim 8:

In Honda in view of Klein, and further in view of Satoh, the controlling comprises instructions for processing the disk speed data to determine times when the speed of the spindle motor should be increased and times when the speed of the spindle motor

should be decreased to maintain desired speed (Honda paragraph 37: "a spindle servo circuit controls...the spindle motor so as to rotate constantly at a rotating speed").

Regarding claims 13, 16, and 26:

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

4. Claims 3, 6, 9, 11, 12, 14, 15, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Klein, and further in view of Satoh, as applied to claim 21 above, and further in view of Osborne (US 5,107,107).

Regarding claim 3:

Honda in view of Klein, and further in view of Satoh, discloses an optical disk drive as discussed above.

Honda in view of Klein, and further in view of Satoh, does not disclose wherein the OPU is additionally configured to track the disk angular orientation features, the disk angular orientation features defined within the label region.

In Honda in view of Klein, , and further in view of Satoh, light from an encoder passes through slits in a disk and is measured on the other side. This is a transmissive scheme.

Osborne discloses that a reflective scheme may be used in place of a transmissive scheme (column 6, lines 1-10). Osborne discloses that an encoder may still be used with this scheme, but that the light source of an optical disk drive (an OPU) is superior (column 11, lines 25-60).

Therefore it would be obvious to one of ordinary skill in the art to include in Honda in view of Klein, and further in view of Satoh, wherein the OPU is additionally configured to track the disk angular orientation features, the disk angular orientation features defined within the label region.

The motivation would be to use the OPU to track the disk angular orientation features instead of a conventional encoder: Osborne discloses that using an OPU overcomes the weaknesses of a conventional encoder.

Regarding claim 6:

This is similar to claim 3 and is similarly rejected.

Regarding claim 9:

In Honda in view of Klein, and further in view of Satoh, and further in view of Osborne, the interpreting comprises instructions for distinguishing between a first and a second signal received from the encoder, wherein the first and second signal result from differences in light reflection correspond to the presence or absence of the disk speed features (taught by Klein, with the additional teaching of Osborne, as discussed above).

Regarding claim 11:

In Honda in view of Klein, and further in view of Satoh, and further in view of Osborne, the interpreting comprises instructions for:

distinguishing between a first and a second signal received from the encoder, wherein the first signal results when light is reflected off a mirrored surface (taught by Osborne column 6 lines 1-10).

Honda in view of Klein, and further in view of Osborne, does not disclose wherein "the second signal results when light is reflected by a substantially circular molded pit that also deflects a portion of the light away from the sensor."

However, Osborne discloses that in an optical disc information can be indicated through a substantially circular molded pit that also deflects a portion of the light away from the sensor (column 8, lines 35-50).

It would have been obvious to one of ordinary skill in the art to include in Honda in view of Klein, and further in view of Satoh, and further in view of Osborne, wherein the second signal results when light is reflected by a substantially circular molded pit that also deflects a portion of the light away from the sensor, as further taught by Osborne.

The rationale is as follows:

Using substantially circular molded pits to indicate information by monitoring a reflected light signal is the fundamental premise of all optical recording media, as disclosed by Osborne. Therefore one of ordinary skill in the art could certainly have created substantially circularly molded pits to create the signal required by Honda in view of Klein, , and further in view of Satoh, and further in view of Osborne, with predictable results.

Regarding claim 12:

In Honda in view of Klein, and further in view of Satoh, and further in view of Osborne, the interpreting comprises instructions for:

distinguishing between the output signals, wherein the output signal are associated with levels of light reflectivity (taught by Osborne as discussed above) within a region defined on a mirror surface (it must be mirrored if it is reflective) adjacent to the coating on the label side of the disk (the entire operation takes place on the label side of the disc as taught by Honda).

Regarding claim 14:

Honda in view of Klein, and further in view of Satoh, and further in view of Osborne, discloses an optical disk drive as discussed above.

Honda in view of Klein, and further in view of Osborne discloses means for tracking, with an OPU, disk angular orientation data defined by disk angular orientation features; and

Honda in view of Klein, and further in view of Osborne, does not disclose means for passing the disk angular orientation data to the means for labeling to create an image having a desired angular orientation on a coating on the optical disk.

It would have been obvious to one of ordinary skill in the art to include in Honda in view of Klein, and further in view of Osborne, means for passing the disk angular orientation data to the means for labeling to create an image having a desired angular orientation on a coating on the optical disk (already implied by Honda paragraph 38).

The motivation would have been to print an image having a desired orientation to a reference position (this motivation is already present in Honda paragraph 38, but Honda itself did not disclose means to accomplish it).

Regarding claim 15:

Honda in view of Klein, and further in view of Satoh, and further in view of Osborne, discloses wherein the disk angular orientation features are molded features (Osborne column 6 lines 1-30) located radially inside an area on the optical disk reachable by an OPU, to produce the disk angular orientation data (taught by Osborne as discussed above).

Regarding claims 17, 19, and 20:

All elements positively recited have already been identified with respect to earlier rejections. No further elaboration is necessary.

5. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Klein, and further in view of Satoh, and further in view of Osborne as applied to claim 3 above, and further in view of Nagashima (US 5,670,947).

Regarding claim 10:

Honda in view of Klein, and further in view of Satoh, and further in view of Osborne, discloses a processor-readable medium as discussed above.

In Honda in view of Klein, and further in view of Satoh, and further in view of Osborne, the interpreting comprises instructions for:

distinguishing between a first and a second signal received from the encoder, wherein the first signal results when light is reflected off a mirrored surface to a sensor (taught by Osborne as discussed above).

Honda in view of Klein, and further in view of Satoh, and further in view of Osborne, does not disclose wherein "the second signal results when light is reflected by a saw tooth feature that also deflects a portion of the light away from the sensor."

However, Osborne does teach that one surface should reflect light back to the sensor and the other should not (column 6, lines 5-50).

Nagashima discloses a saw tooth feature that deflects a portion of light away from a sensor (column 3, lines 29-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Honda in view of Klein, and further in view of Satoh, and further in view of Osborne, wherein the second signal results when light is reflected by a saw tooth feature that also deflects a portion of the light away from the sensor.

The rationale is as follows:

Osborne discloses detecting the presence of absence of a reflected signal with a sensor. Nagashima discloses a method of deflected a reflected signal so that a sensor does not detect. One of ordinary skill could have combined these two elements together with predictable results.

Regarding claim 18:

All elements positively recited have already been identified with respect to earlier rejections. No further elaboration is necessary.

Response to Arguments

6. Applicant's arguments filed October 31st, 2007 have been fully considered but they are not persuasive.

Applicant makes a number of arguments. Some of these arguments are no longer applicable due to the new grounds or rejection, but others still apply. For clarity, every argument will be addressed whether it applies or not.

First, starting on pages 9-10, Applicant argues that Honda in view of Klein does not disclose two elements of the claim: that the first and second annular rings abut one another, and that the annular rings are proximate a central hub of the disk.

The second of these two elements has been rejected through the teaching of Satoh, and Applicant's arguments with regards to it are therefor moot due to the new grounds of rejection.

Regarding the first element (that the first and second annular rings abut one another), the Examiner had previous rejected this as obvious over Honda in view of Klein. That part of the rejection has been maintained, and so Applicant's numerous arguments on this element will be addressed in turn.

On pages 10-11, Applicant argues that shifting the position of the annular rings of Klein does modify the operation of the device, because it alters the "size of the contiguous area of the label reason on the optical disk." Applicant argues that if the position is not shifted, there would have to be two non-continuous label regions instead of one, creating a "visual discontinuity."

This argument is not persuasive. Whether or not there is a "visual discontinuity" is a matter of artistic merit and not of engineering: the purpose of the annular rings is to track speed and angular orientation, and the annular rings work for that purpose regardless of their appearance and regardless of their position on the disk. Furthermore, the Examiner notes that Applicant's original disclosure did not express concern over the "visual discontinuity," and even disclosed embodiments that contained it: see, for example, Fig. 2.

Applicant next argues, in the second paragraph of page 11, that moving the annular rings to proximate the central hub increases the surface area of the label region. Again, this element of the claim has been rejected using a new grounds of rejection and Applicant's argument here against Honda in view of Klein is therefore moot. However, Examiner notes that this reasoning was not present in Applicant's original specification.

Applicant next argues, starting in the final paragraph of page 11, that the Office has not provided a motivation to abut the rings of the Klein reference. However, as the rejection indicates, it has been held that it is obvious to move an element when its position does not affect the operation of the device: therefore it is obvious to move the rings to an abutting position.

Applicant argues, starting on page 12, that repositioning the rings of Klein to proximate the central hub would result in an inoperative device. Again, this part has been taught by Satoh, so this argument is moot. However, to address it anyway, the Examiner notes that Applicant's argument appears to be that the rotary hub of Klein, used in a mouse or joystick, would be too small to have annular rings near the central hub. However, Klein has only been relied upon to teach the method of tracking speed and angular orientation. That teaching has been applied to the optical disc of Honda, as per the 103 rejection above, and therefore the annular rings of the 103 combination are being used in an optical disc. As Satoh shows, an optical disc is large enough to have annular tracking rings proximate the central hub.

Applicant next argues, starting the last paragraph of page 12, that moving the annular rings of Klein to proximate the hub is taught away from by Klein. However, Applicant does not provide any basis for this argument: the Examiner has reviewed Klein and found no indication that positioning the rings proximate the hub is taught away from.

On page 13, Applicant applies the previous set of arguments to claims 13 and 22: those arguments were no more persuasive with respect to those claims than with respect to earlier ones.

Starting in the last paragraph of page 13, Applicant makes a general statement that the incorporation of Osborne is hindsight reasoning. Applicant makes the same argument with regard to Nagashima on page 14.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (571) 272-5264. The examiner can normally be reached on 9:00 AM to 6:30 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRL 12/3/07

/William Korzuch/
SPE, Art Unit 2627